

# A Hidden Link to Foster Equity and Inclusion?

*A Study on the Defining Features of Academic Makerspaces*



Dr. Maggie Melo, Laura March & Dr. Kimberly Hirsh

University of North Carolina at Chapel Hill

Equity in the Making Lab | Project funded by NSF Award # 1942930

MIRA

July 15, 2021

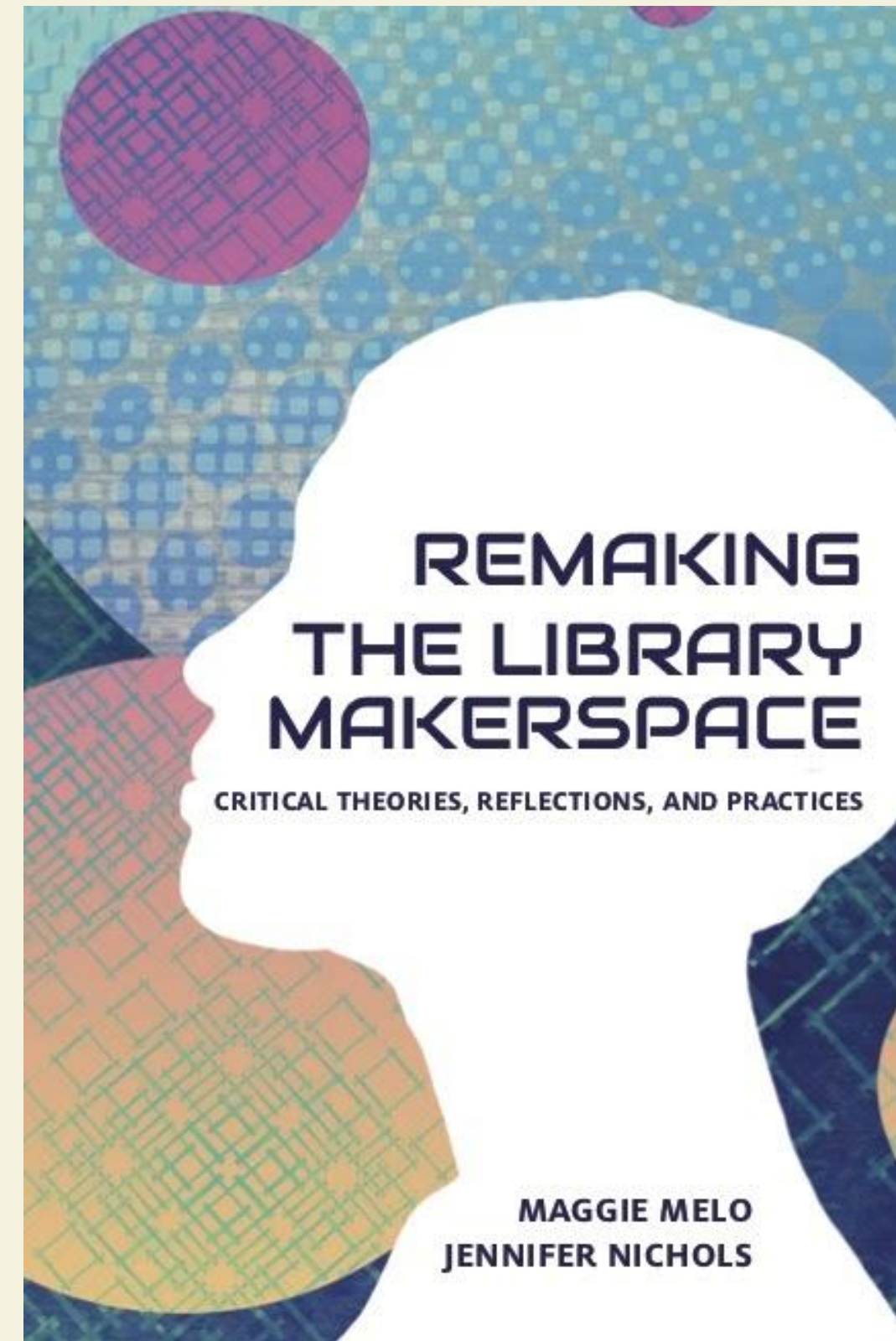
# Welcome!

**Chat Storm and lots of resources**

**Book Raffle** 

*Re-making the Library Makerspace:  
Critical Theories, Reflections, & Practices*

To enter: Retweet and reply!  
Winner announced today at 5pm EDT



# Speakers



**Dr. Maggie Melo  
(She/Her)**

PI & Director of Equity  
in the Making Lab  
[eitm.unc.edu](http://eitm.unc.edu)  
[@marijel\\_melo](https://twitter.com/marijel_melo)



**Laura March, MS, MEd  
(She/Her)**

Researcher  
[lauramarch.com](http://lauramarch.com)  
[@theartofmarch](https://twitter.com/theartofmarch)



**Dr. Kimberly Hirsh  
(She/Her)**

Alumna & Consultant  
[kimberlyhirsh.com](http://kimberlyhirsh.com)  
[@kimberlyhirsh](https://twitter.com/kimberlyhirsh)

# Agenda

About the Project

Findings:

- Defining Makerspaces
- Affect, Emotion & Intangibility

Next steps: So what? Now what?

Q&A

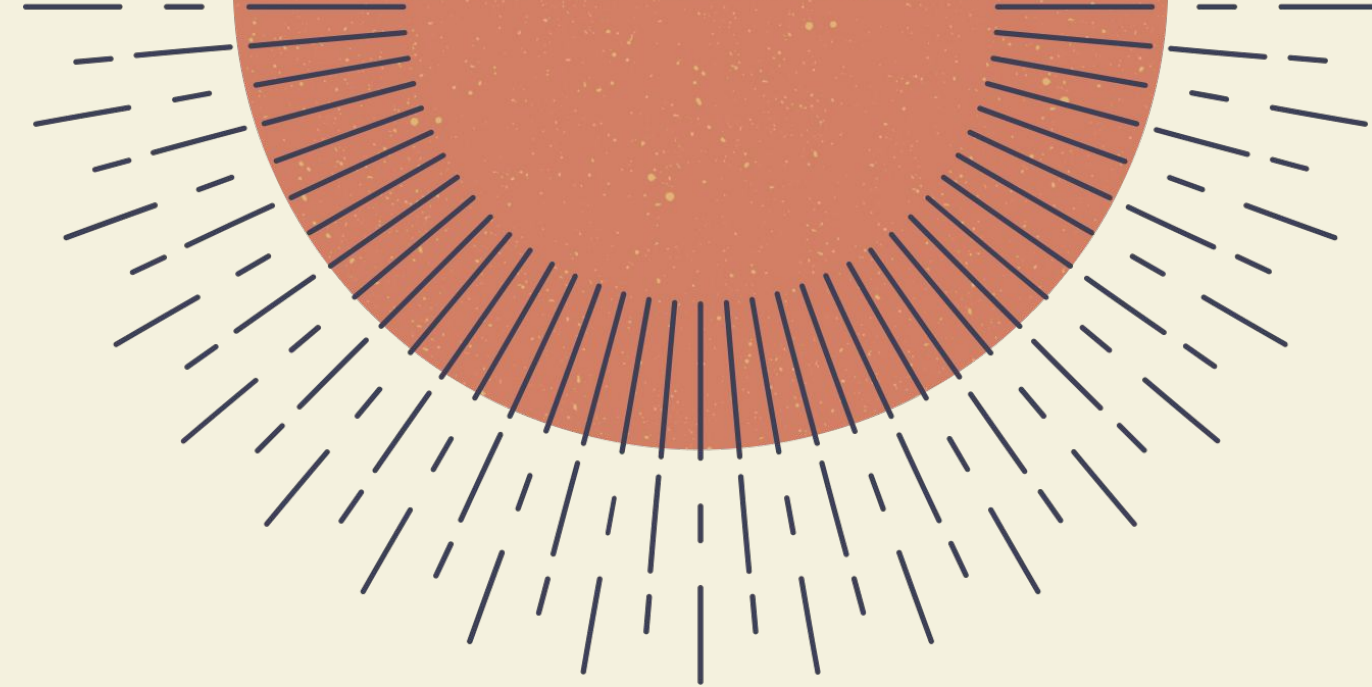






# Outcomes

- Outline the defining features and values undergirding a makerspace.
- Identify the connection between identifying a "makerspace" and equity/inclusion efforts.
- Leave with a reference guide that outlines the top features (sights, sounds, and scents) of a makerspace as defined by makerspace leaders.

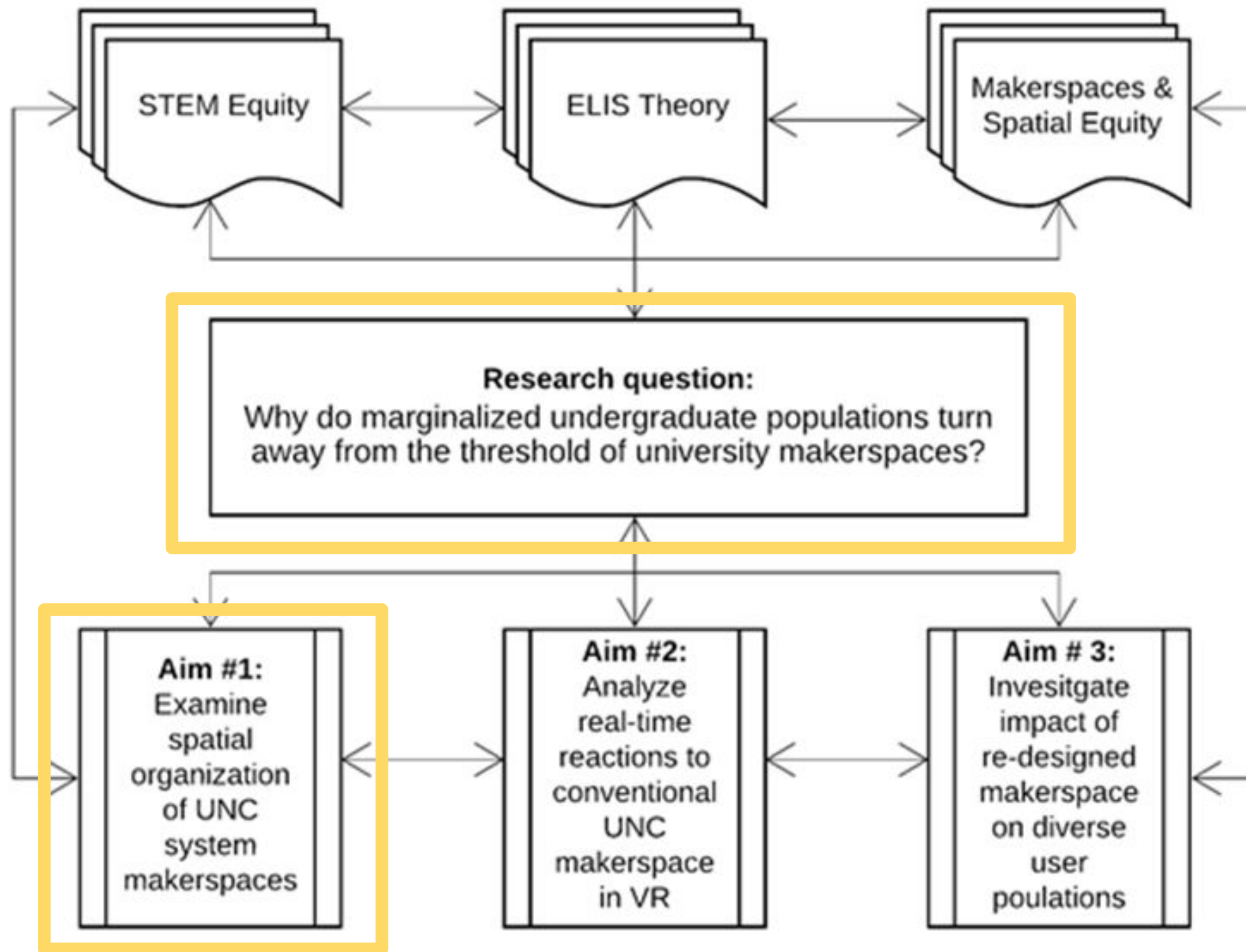


# About the Project














# Project Design



*Overarching Research Question:*  
“How does a makerspace spatially  
communicate who belongs in the space?”





# Chat Storm Question!



*How do you \*know\* a makerspace is a makerspace?*





# Project design

- Qualitative research informed by Grounded Theory
- Purposive sampling
  - 17 UNC System Universities
  - 12 universities with makerspaces
  - Interviewed 17 leaders from 11 universities
- Collaborative coding via MAXQDA and weekly team meetings:
  - Check out the Equity in the Making blog for more research details

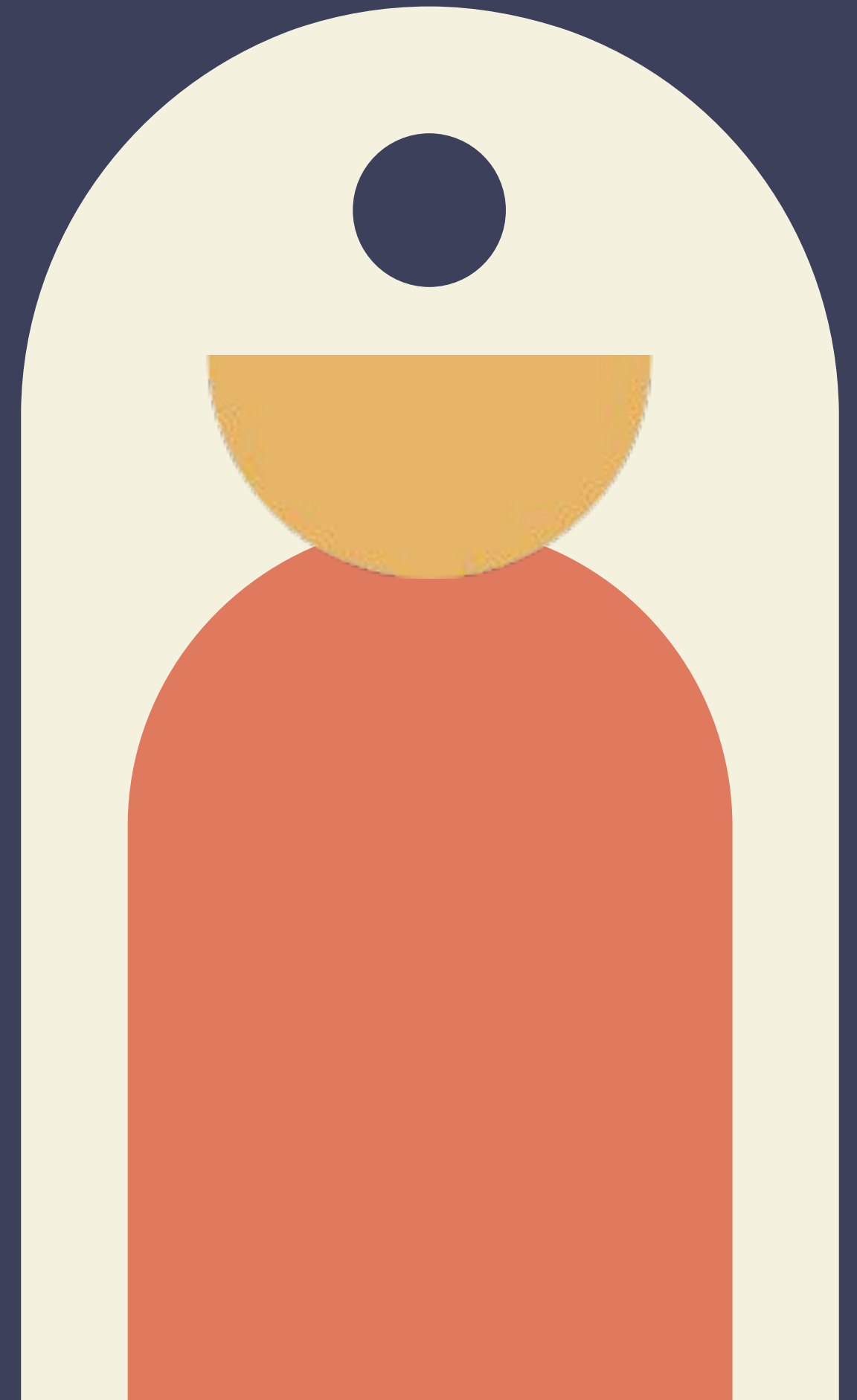






# Defining Makerspaces

What does a  
typical makerspace  
smell like?





IDEALISM

PERSONAL  
EXPERIENCES

COURTESY  
BIAS

MAKERSPACE DEFINITIONS





# bit.ly/mira-eitm

Defining Features of Makerspaces: Full Findings



# The Contentions of Defining a Makerspace

10

Discomfort with stating  
one's values or beliefs



8

Avoiding or broadening  
the term “makerspace”



8

Difficulty integrating  
prior experiences with  
desired preferences



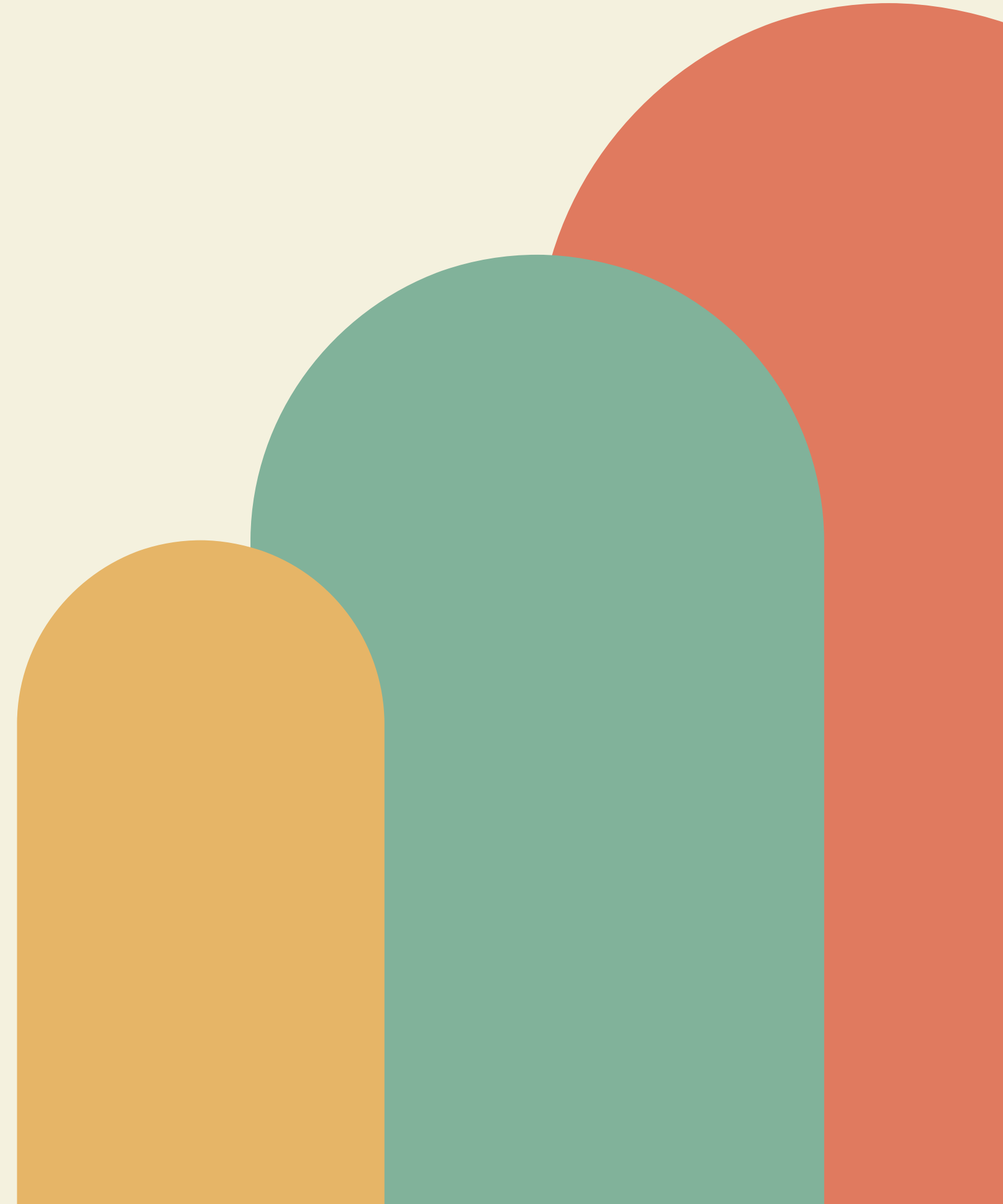


# Overarching Features

Bright Colors (10)

Openness (10)

Check-in Areas (8 vs. 5)







# People

- Staff look similarly to students (10)
- Young adults or “Student-age” (6)
- Skew male (5)
- Skew white (4)
- Intentional staff differentiation (4 vs. 2)
- Couched responses re: diversity (3)





# Assets

## **Furniture**

Work tables/benches (13)

## **Displays**

Examples (11)

## **Signage**

Safety (8)

## **Tools**

3D Printers (16)

## **Materials**

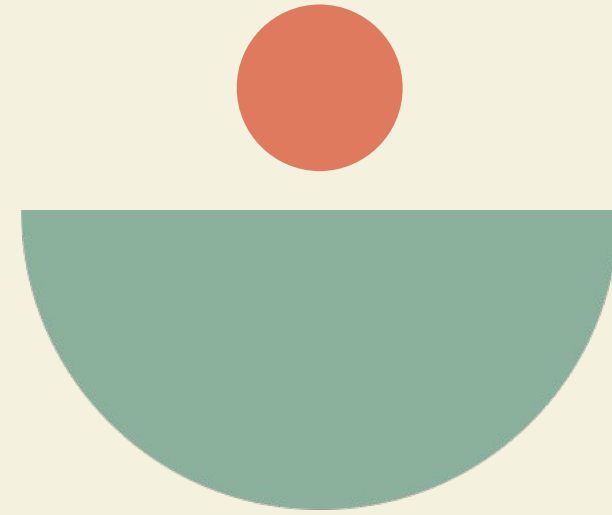
Acrylics/plastic (13)

## **Sounds**

Conversations/talking (14)

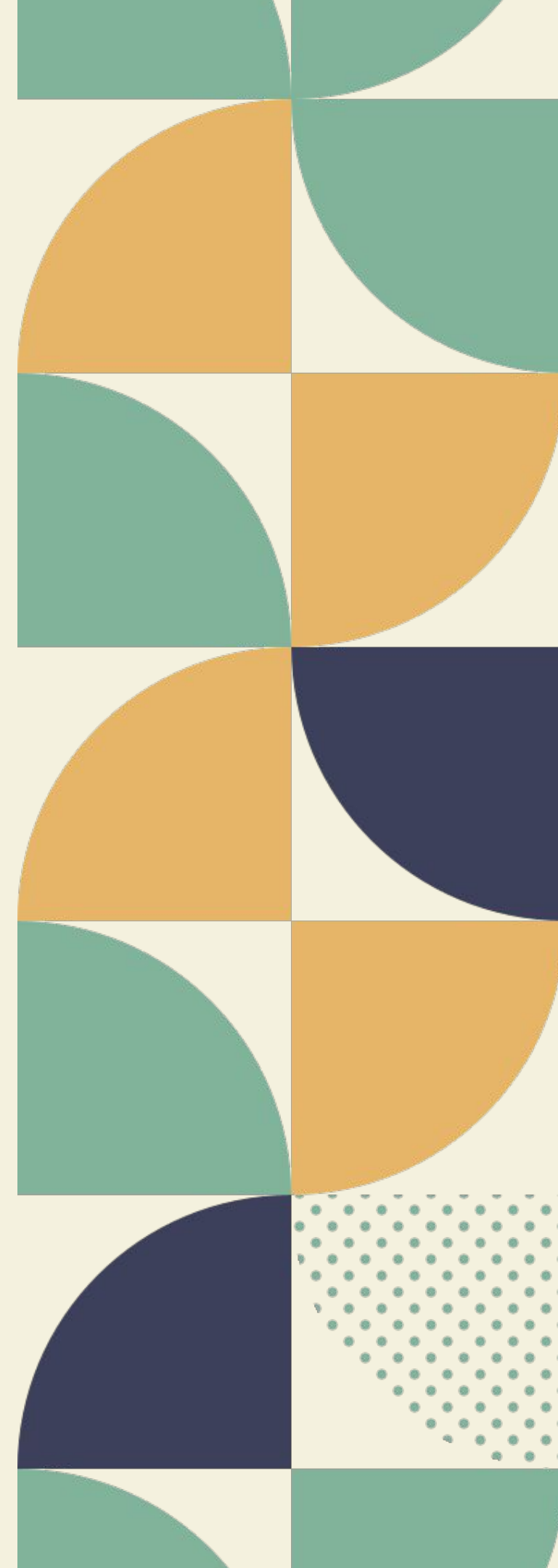
## **Smells**

Burning/melting (11)




# Why is this definition work important?

Illustrates how different aspects of a makerspace collectively communicate the goals, values, and audience of the space



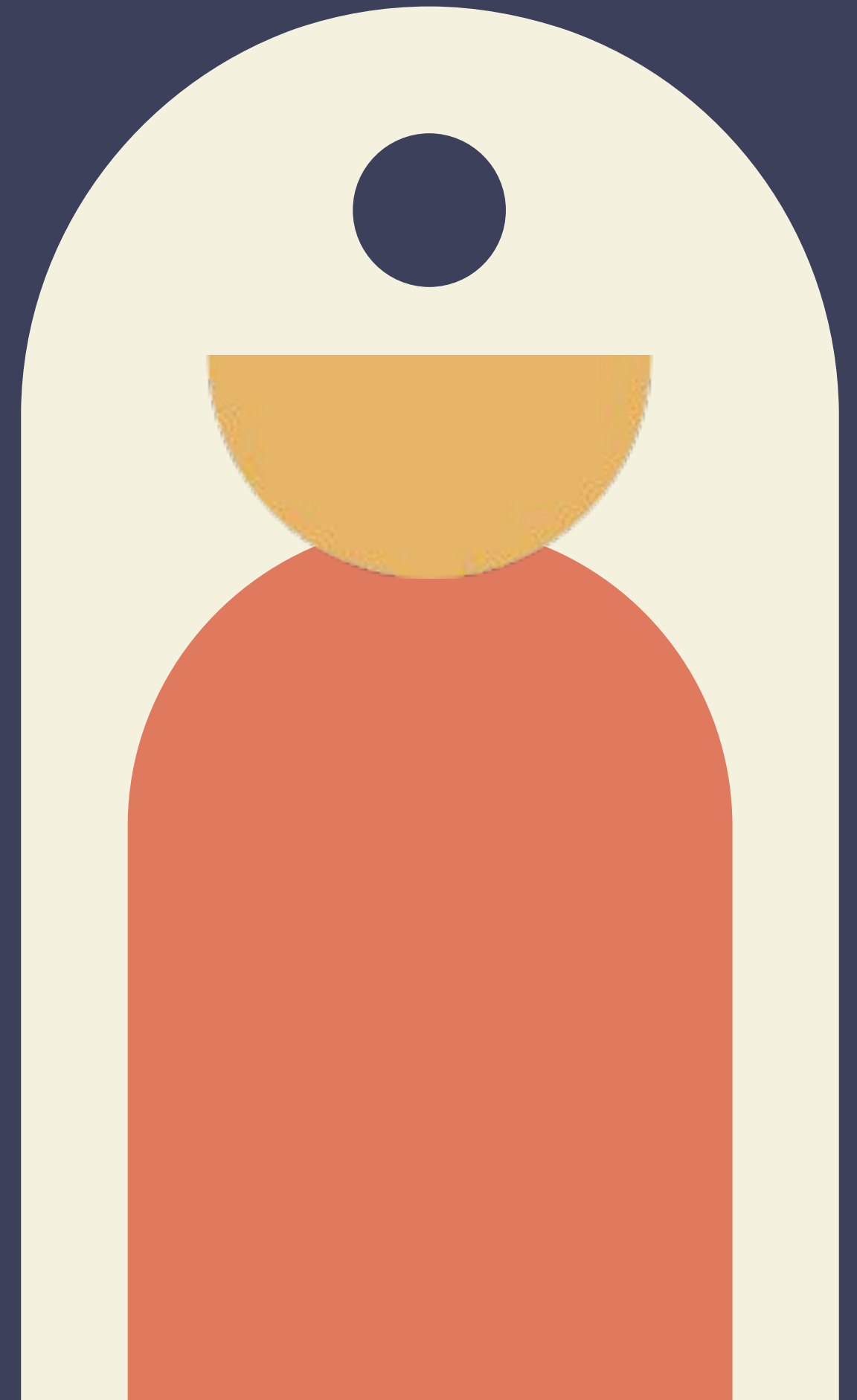


*Affect*



# Affect, Emotion & Intangibility

What does a  
typical makerspace  
feel like?



# Themes Related to Affect/Emotion/Intangibility

14

Affect



11

Support



8

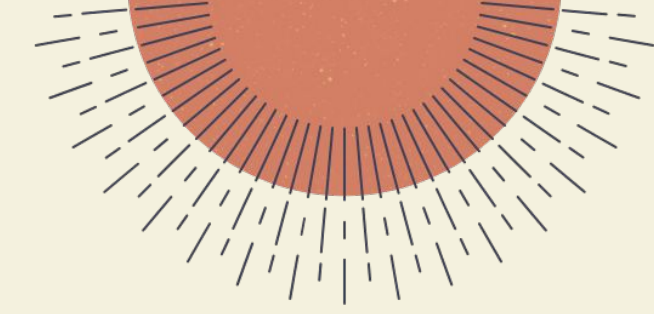
Collaboration



6

Creativity

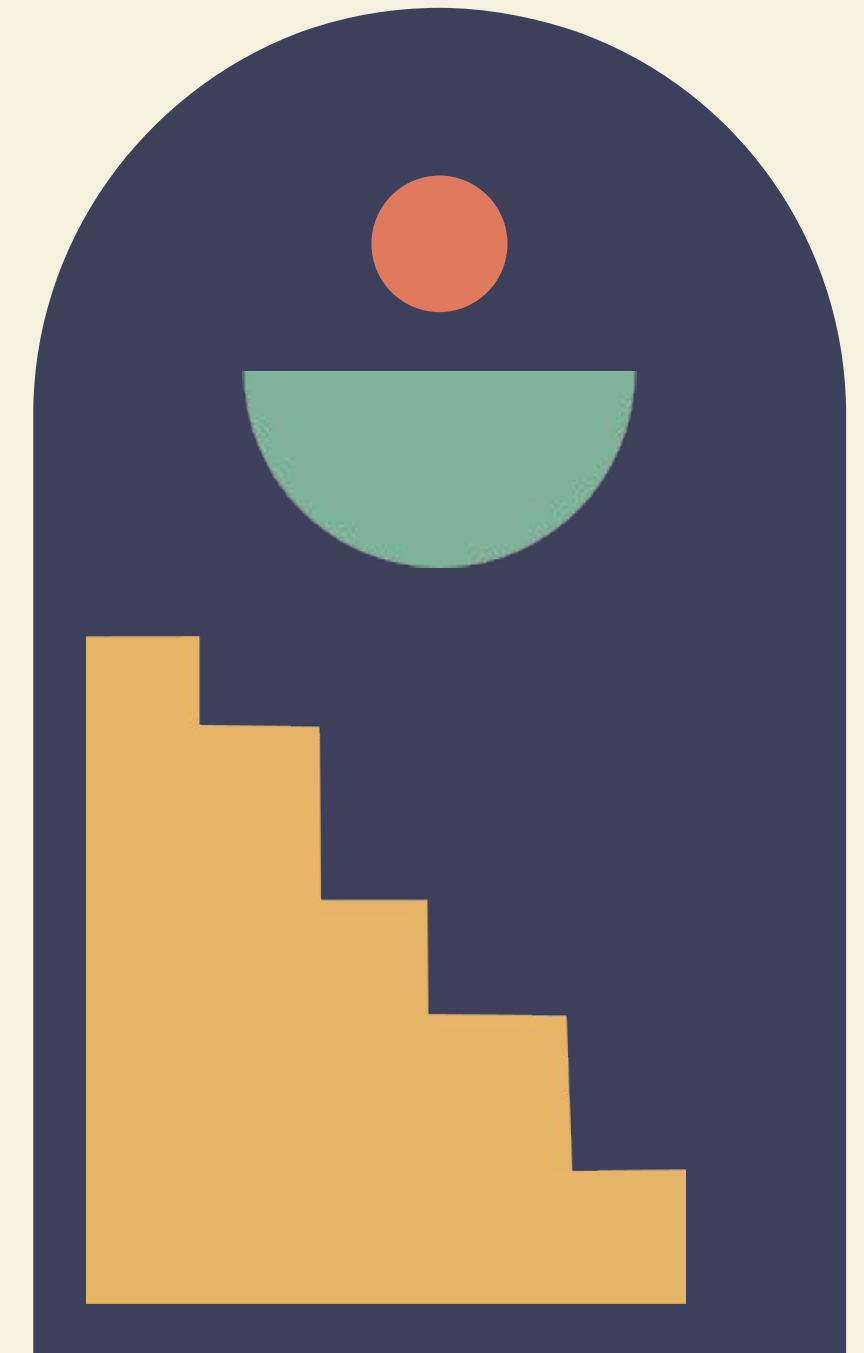




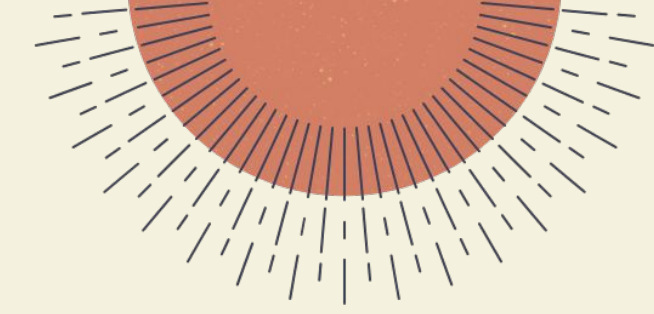
# Affect

Non-linguistic forces that shape the movement, behavior, and feelings of people within a space

- “good vibes”
- “a community feeling”
- “a family feeling”
- “a place where you can really be yourself”



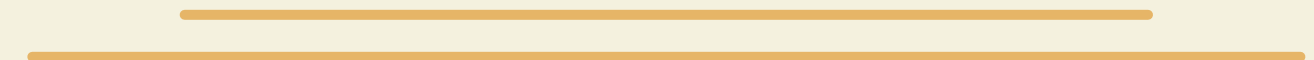
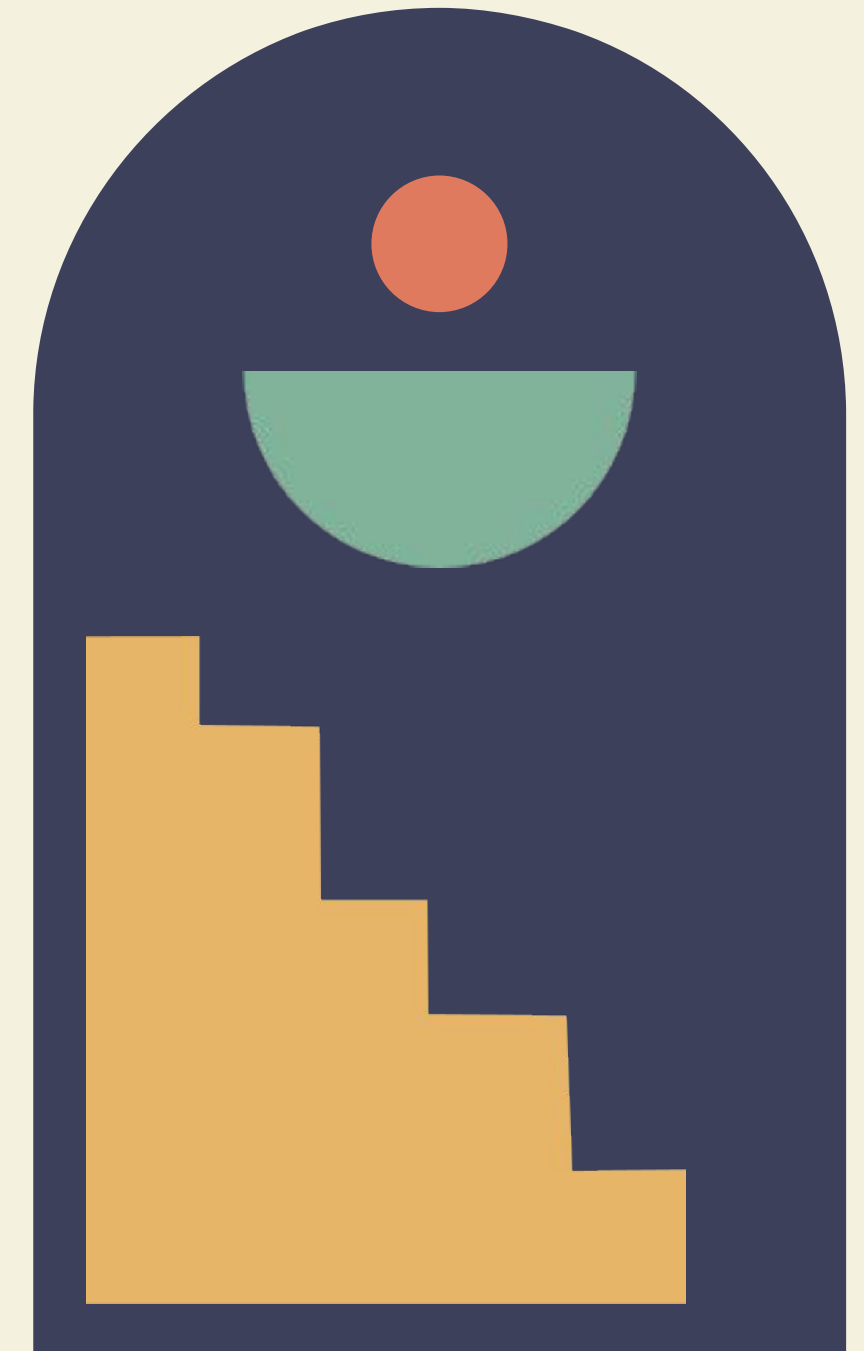




# Support

Assistance from experts and/or peers

- “come in to get help”
- “there are experts there to assist you”





# Collaboration

People working together

- Ability to ask others about their work





# Creativity

Offering opportunities to create as the purpose of the makerspace

- Creating physical things
- Creating knowledge





# Makerspace Vibes

## **What and who are a makerspace for?**

What produces good vibes for one person might produce anxiety for another.

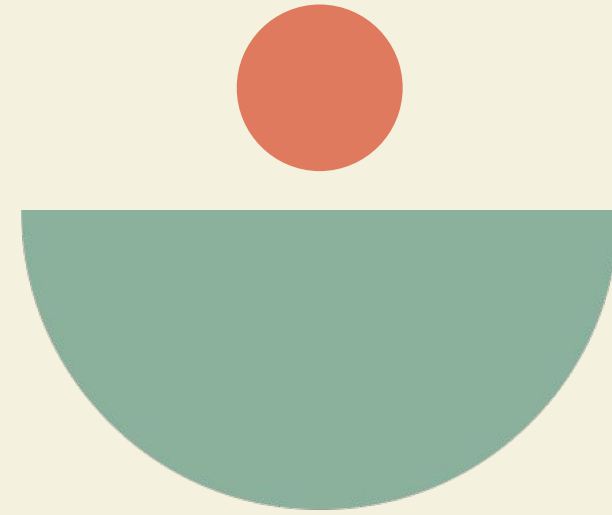
## **What does support look like?**

Some people might prefer someone to approach them while others might prefer to seek someone out.

## **How does a space facilitate collaboration and creativity?**

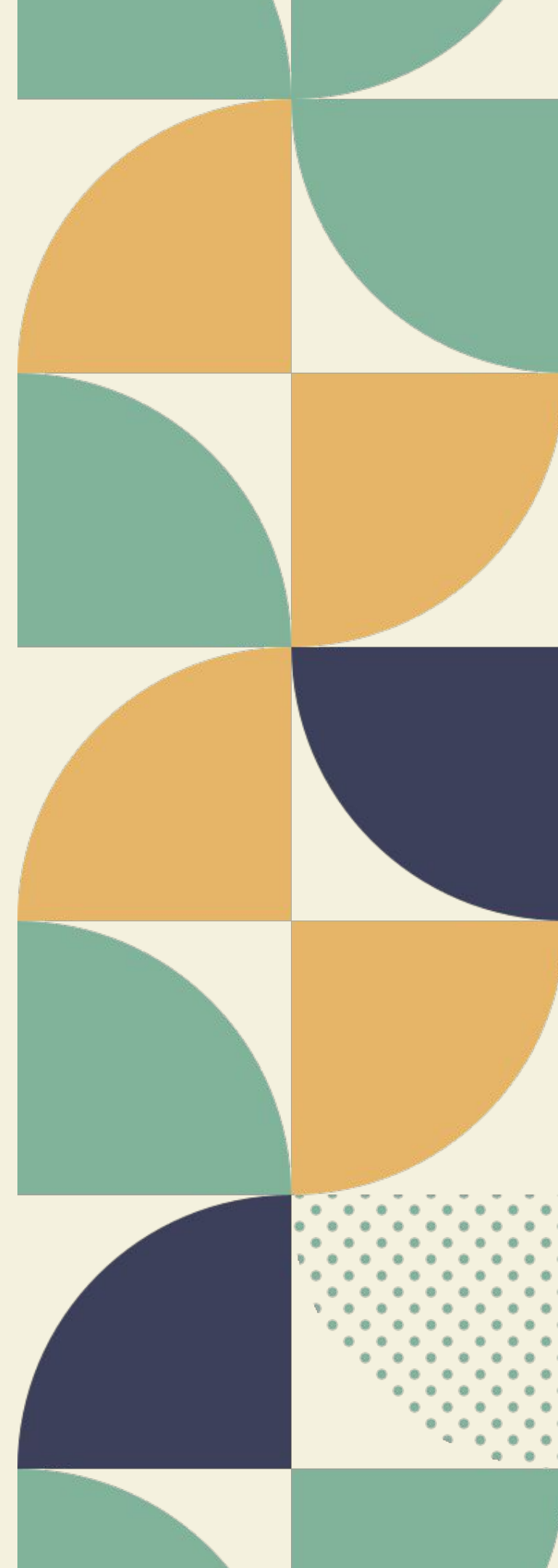
If these are at the heart of a makerspace, we can expect physical features to reflect that.

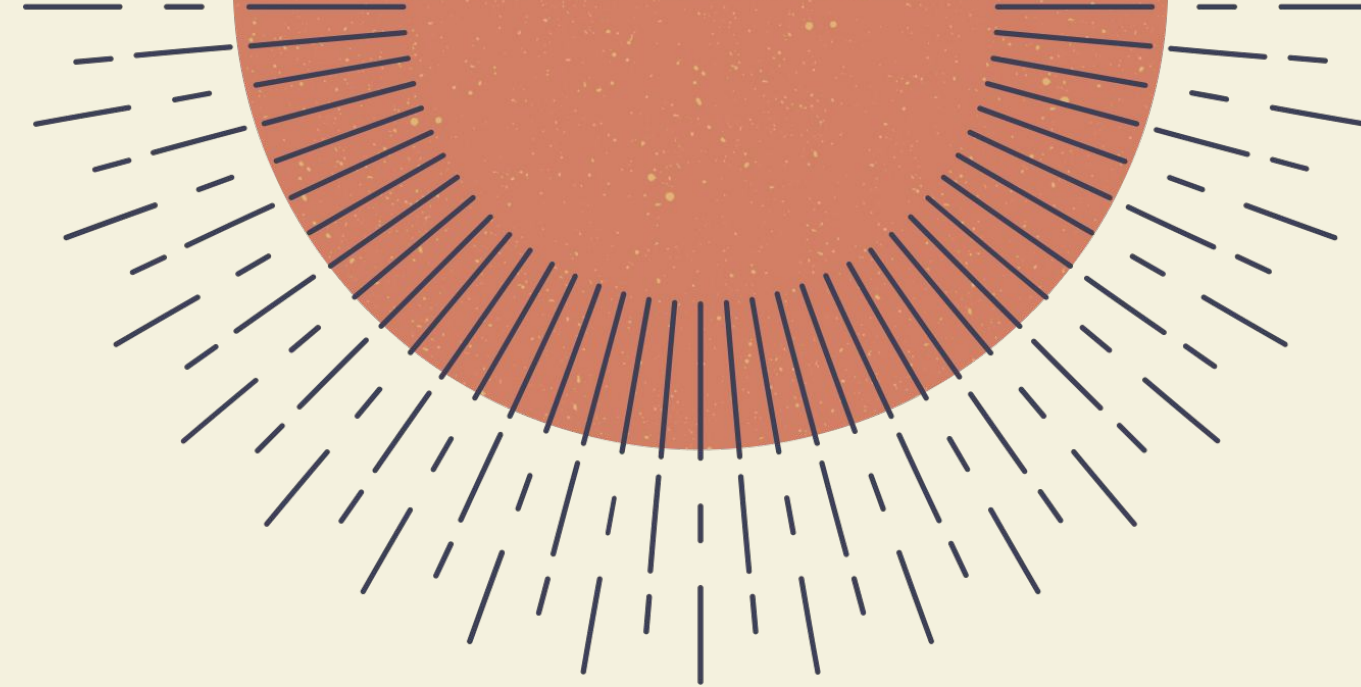




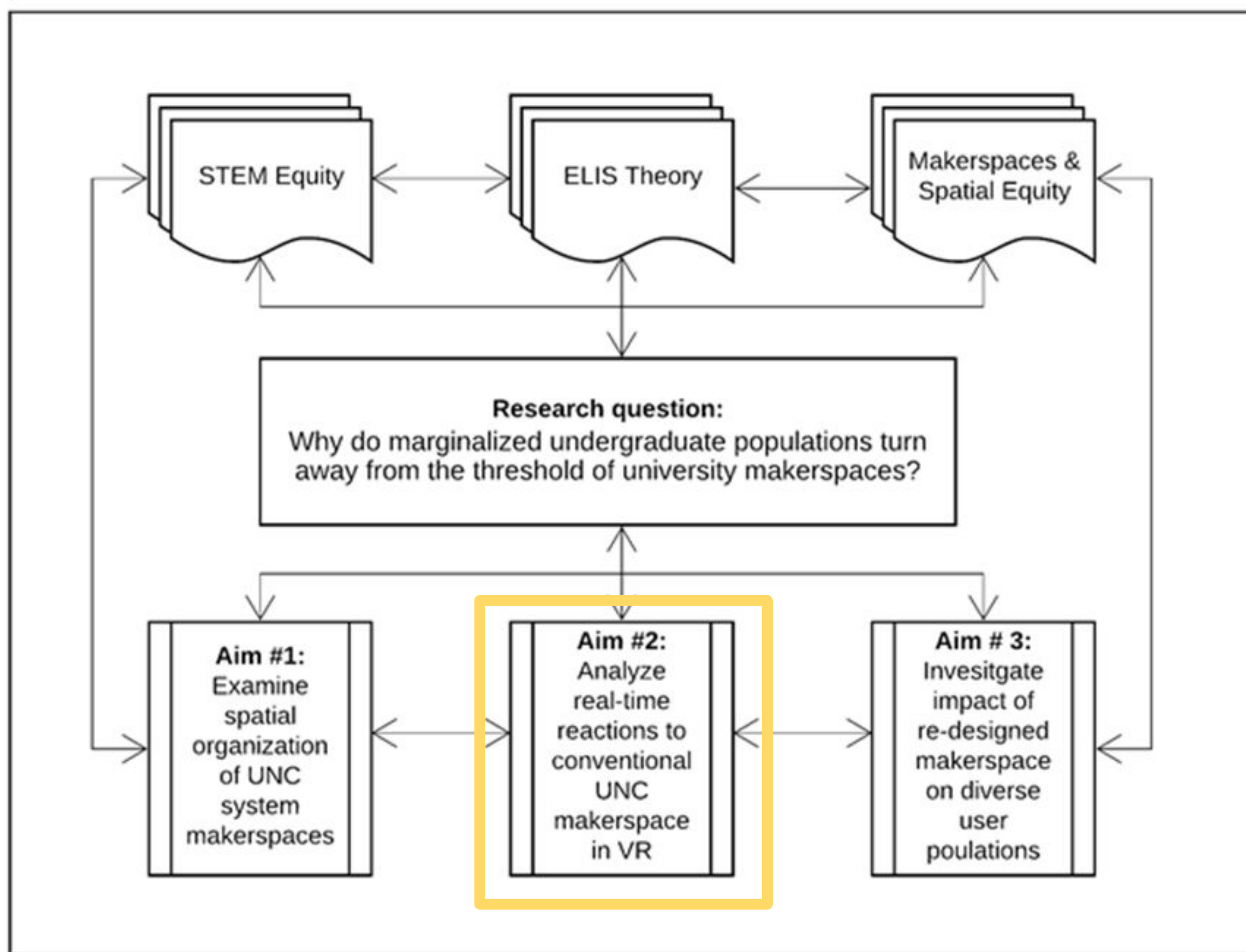
# Why is “What does an typical makerspace feel like?” an important question?

This unexpected aspect of makerspace definitions came across consistently in participants' definitions and discussions of makerspaces.



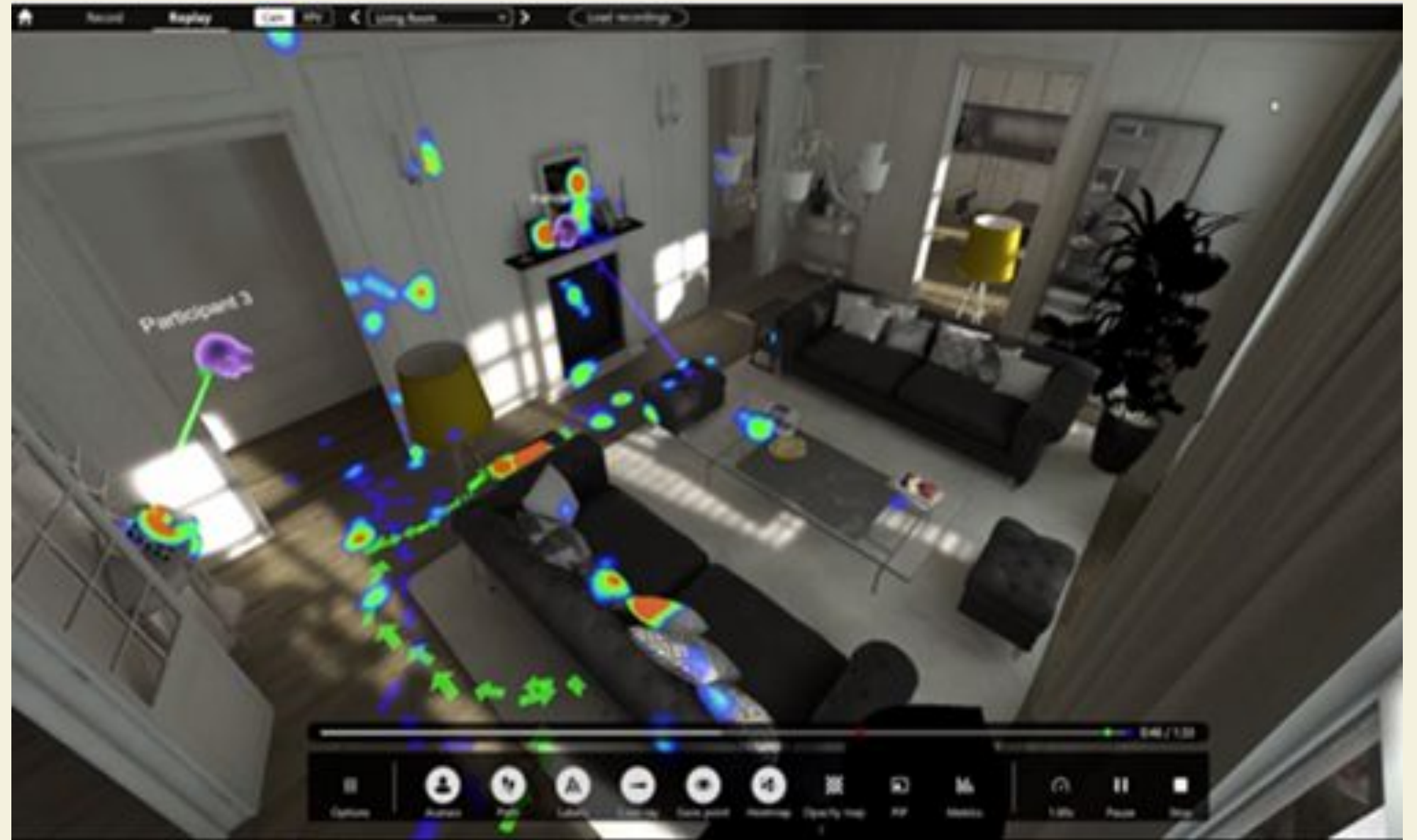


So what?  
Now what?



# Phase 2

- Submit publications from phase 1
- Phase 1 findings = VR makerspace
- Real-time data collection on “first impressions” and reactions in a makerspace
- Think-aloud protocol and eye-tracking data



*Image of Tobii VR eye tracking heat map*



# Equity in the Making Lab





# Thank you!

Let's connect:  
[eitm.unc.edu](http://eitm.unc.edu)